PS-515

AEP Model
E Model

FULL AUTOMATIC STEREO TURNTABLE SYSTEM

SPECIFICATIONS

GENERAL

Power Requirements:	120 or 220V ac adjustable, 50/60 Hz (E model) 110, 120, 220 or 240V ac adjustable, 50/60 Hz (AEP model)
Power Consumption:	8 W
Dimensions:	Approx. 450(w) x 135(h) x 385(d) mm 17 3/4 (w) x 5 3/8 (h) x 15 1/4 (d) inches Including projecting parts and controls
Weight:	Approx. 8 kg, 17 lb 10 oz (net) Approx. 9.6 kg, 21 lb 3 oz (in shipping carton)

TURNTABLE

Platter:	32.6 cm (12 7/8 inches), aluminum-alloy diecasting
Drive System:	Direct drive
Speeds:	33 1/3, 45 rpm
Speed Control Range:	±3%
Wow and Flutter:	0.03% (WRMS) ±0.045% (DIN)
S/N Ratio:	70 dB (DIN-B)

TONEARM

Type:	Statically balanced, universal
Arm Length:	300 mm (11 3/4 inches), overall 216.5 mm (8 1/2 inches), pivot-to-stylus
Overhang:	16.5 mm (21/32 inches)
Tracking Error:	+3°, −1°
Tracking-force Adjustment Range:	0 – 3 g
Shell Weight:	7.5 g
Cartridge Weight Range:	4 – 12 g

CARTRIDGE VL-15G (E model)

Type:	Moving magnet type
Frequency Response:	10 Hz – 30 kHz
Channel Separation:	25 dB at 1 kHz
Output Voltage:	4 mV at 1 kHz, 5 cm/sec, 45°
Load Impedance:	50 kΩ
Tracking Force:	1.2 – 2.5 g (1.7 g recommended)
Stylus:	Sony ND-15G (Conical 0.6 mil diamond)
Weight:	5.2 g

0 dB = 0.775 V

– Continued on page 2 –

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SONY®

SERVICE MANUAL

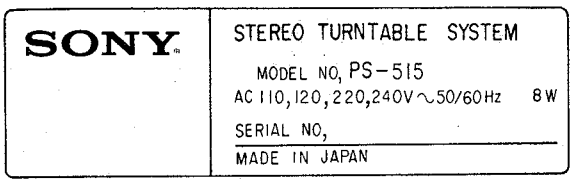
CARTRIDGE VL-34G (AEP model)

Type:	Moving magnet type	**Load Impedance:**	50 kΩ
Frequency Response:	10 Hz – 30 kHz	**Tracking Force:**	1.5 – 2.5 g (2.0 g recommended)
Channel Separation:	25 dB at 1 kHz	**Stylus:**	Sony ND-134G (conical 0.6 mil diamond)
Output Voltage:	3 mV at 1 kHz, 5 cm/sec, 45°	**Weight:**	5.5 g

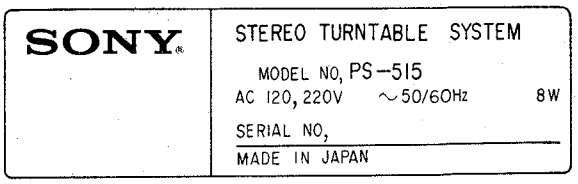
MODEL IDENTIFICATION

– Specification Label –

E model

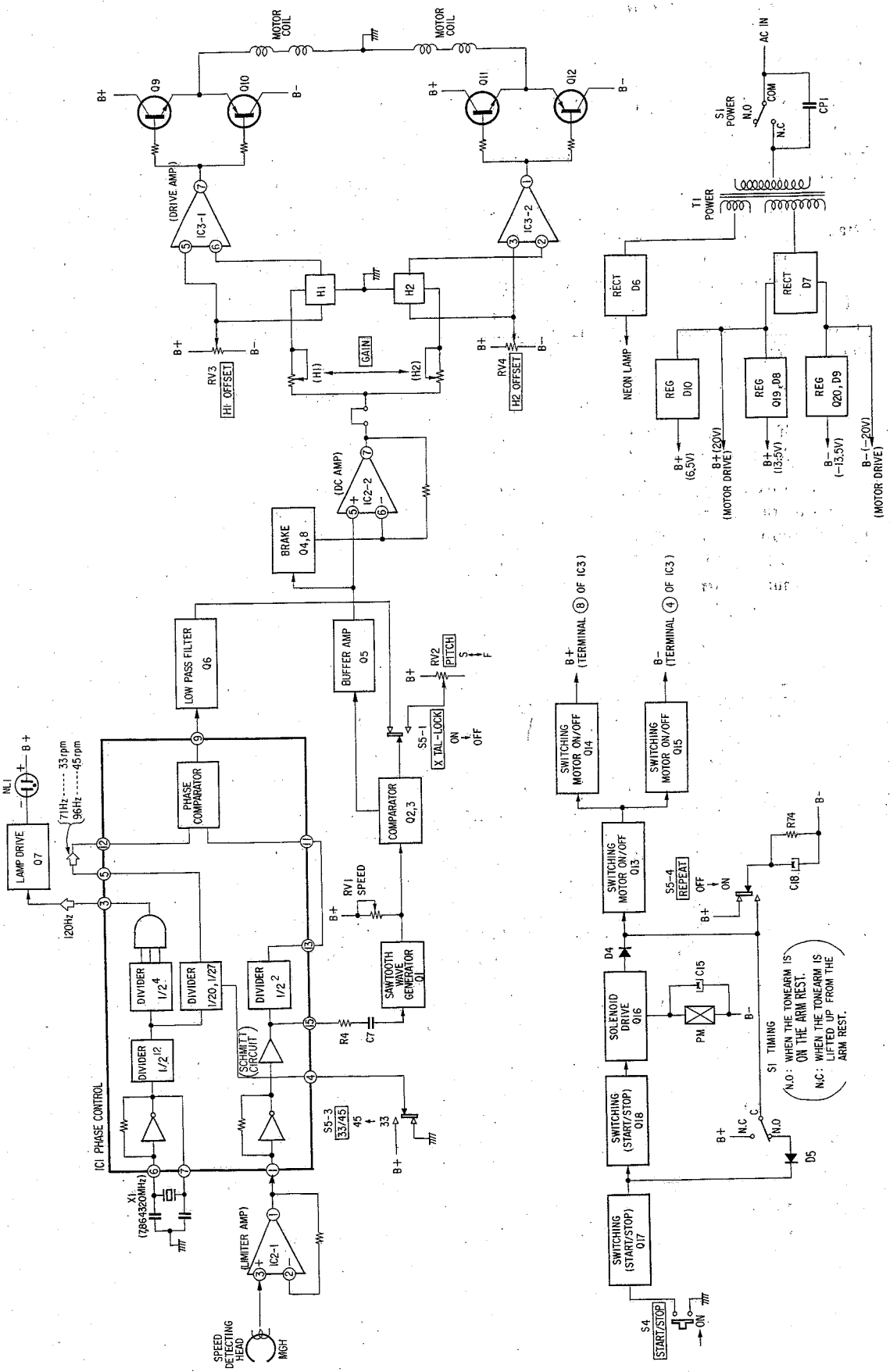


AEP model



SECTION 1
OUTLINE

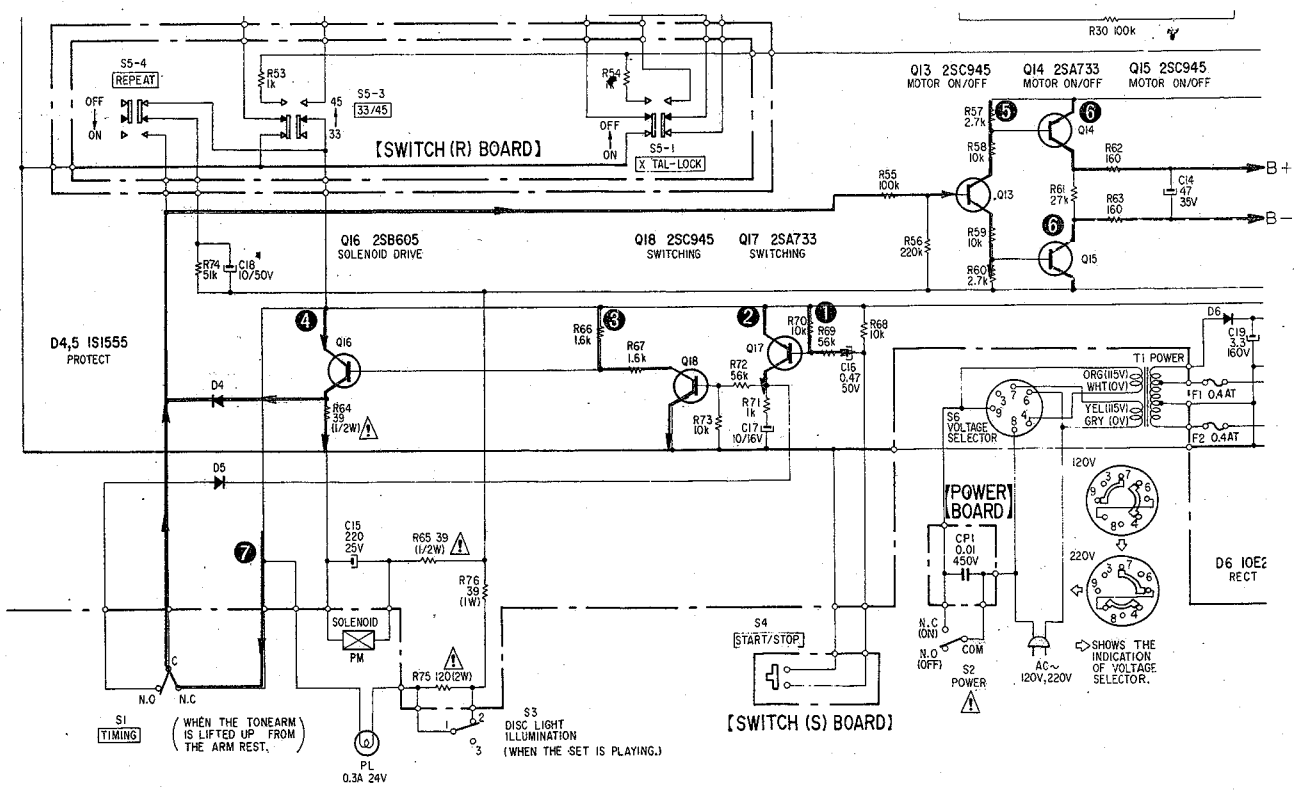
1-1. BLOCK DIAGRAM



1-2. ELECTRICAL DESCRIPTION

Operation When the START/STOP Button is Pushed

1. When the START/STOP button (S4) is pushed, the current temporarily flows via route ❶, turning on Q17 (route ❷). Q18 turns on at the same time (route ❸).
2. When the current flows via route ❸, the bias voltage is applied to Q16, turning it on (route ❹). At the same time Q13 turns on (route ❺). This provides bias voltage to Q14 and Q15 by (route ❺), which then conduct. The power supply is fed to IC3 (route ❻), and the turntable starts rotating.
3. The solenoid is actuated via route ❹ and pushes out the drive-gear pawl. The drive gear rotates half a turn by the rotation of the turntable (for lead-in motion).
4. When the drive gear rotates and starts the lead-in motion, the timing switch (S1) changes to the N.C. position and the current flows via route ❼ to keep Q13 counducting. The turntable continues to turn.
5. When the tonearm enters the out-of record groove, the clutch lever is pushed by the arm lever, pushing out the drive-gear pawl. (When the START/STOP button (S4) is pushed while playing, the solenoid is actuated via route ❹ and the drive-gear pawl is pushed out.)
6. The drive gear rotates half a turn by the drive-gear pawl (for return motion) as the turntable rotates.
7. The timing switch (S1) changes the N.O. position by the mechanism when the tonearm completes the return motion. When the REPEAT switch (S5-4) is off, Q13 is turned off because no current flows via route ❼. Provided with no bias, Q14 and Q15 do not conduct.
   Thus the power supply to IC3 is cut out and the turntable stops rotating.



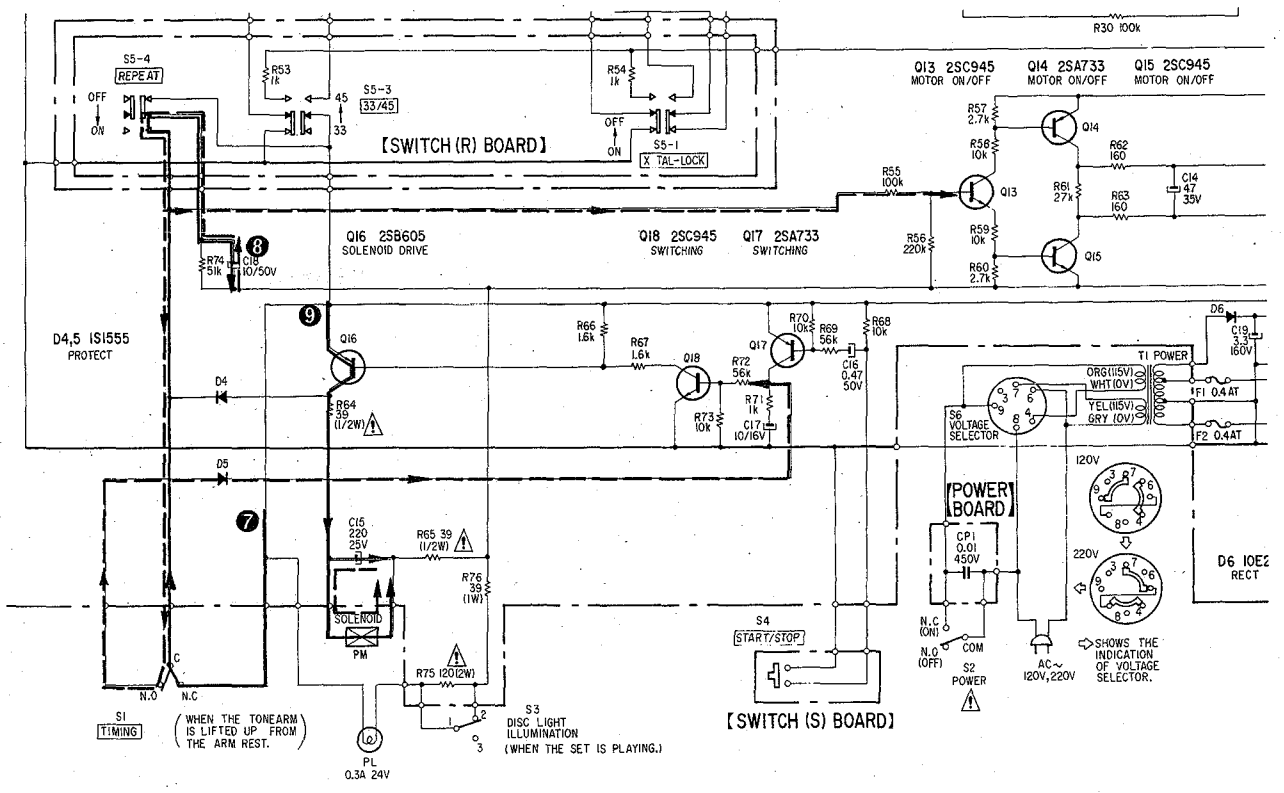
Operation When the REPEAT Switch is ON

1–6. The same as when the START/STOP button is pushed.

7. C18 is charged via route ❼ while the tonearm is on the arm rest (when S1 is in the N.C. position).

8. When the tonearm ends the return motion, the timing switch (S1) changes to N.O. position by the mechanism. Q13 keeps conducting at the same time by the discharge (route ❽) of C18. The turntable continues to rotate. Q18 and Q16 turn on via route ❽, thus actuating the solenoid. (route ❾).

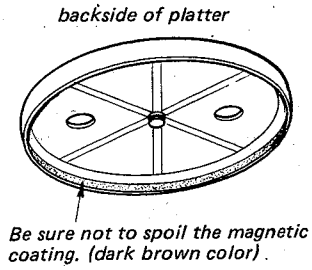
9. The drive gear rotates half a turn by the rotation of the turntable (for lead-in motion).



SECTION 2
DISASSEMBLY

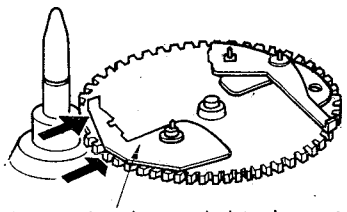
REPAIR CAUTION

- Platter handling



Be sure not to spoil the magnetic coating. (dark brown color).

- Platter installation

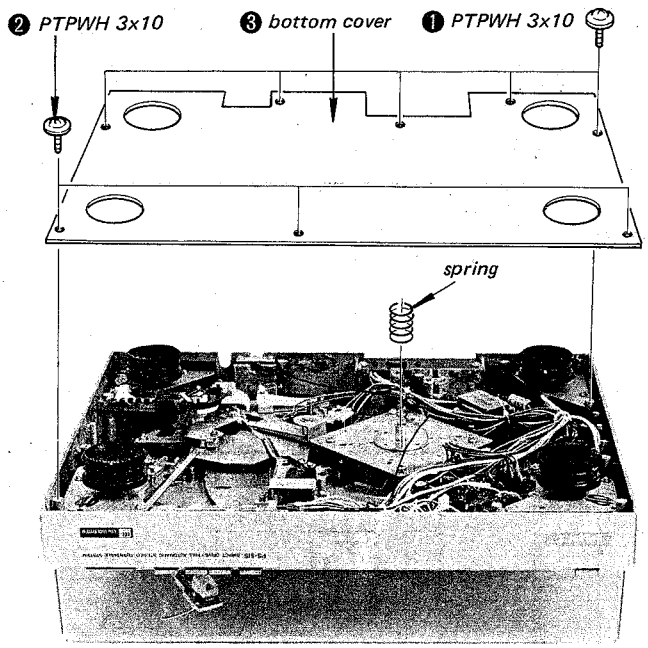


Be sure that the metal plate does not protrude outside the white gear.

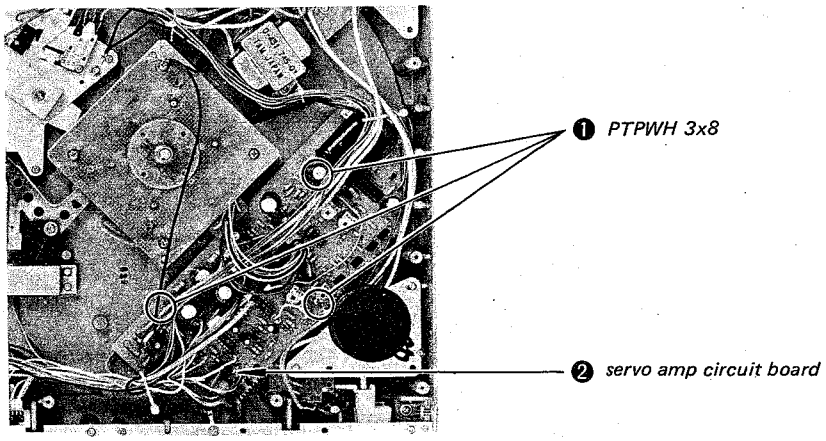
- Do not connect the power cord and remove the platter.

Note:
Follow the disassembly procedure in the numerical order given.

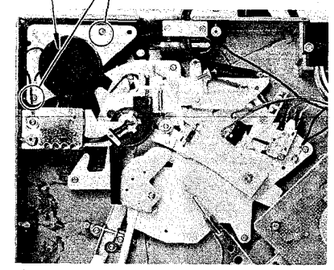
BOTTOM COVER REMOVAL

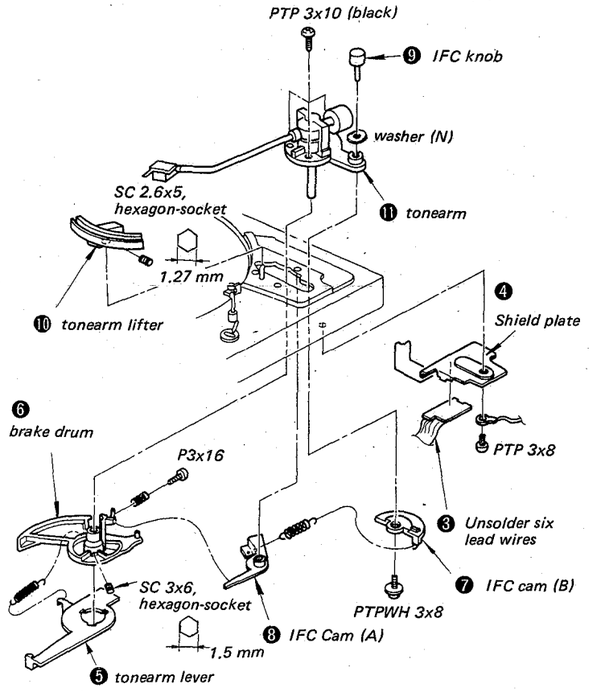


SERVO AMP CIRCUIT BOARD REMOVAL

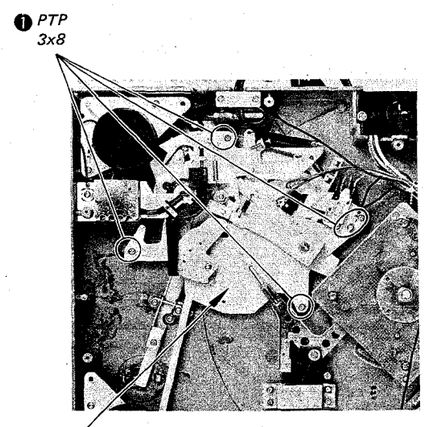


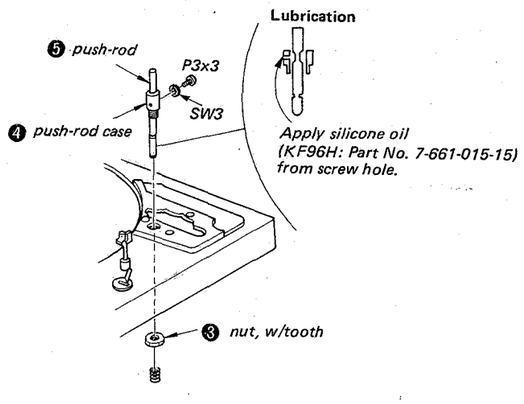
TONEARM REMOVAL



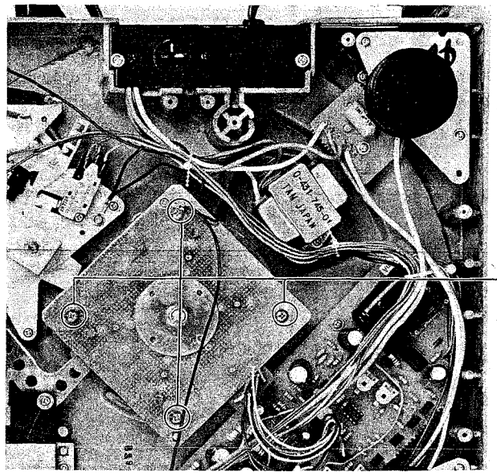


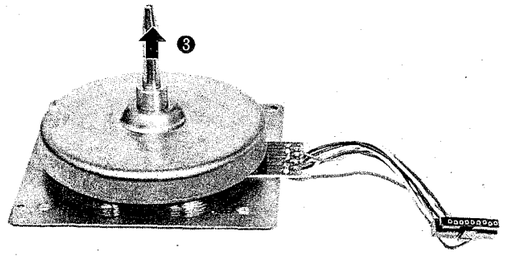
PUSH-ROD REMOVAL

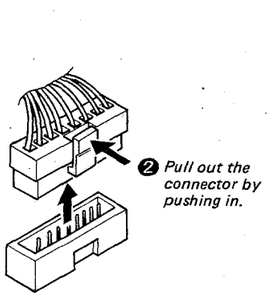


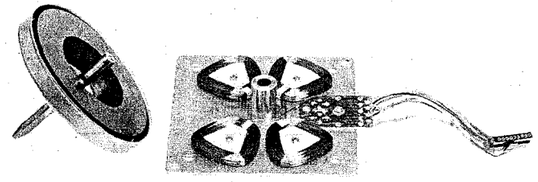


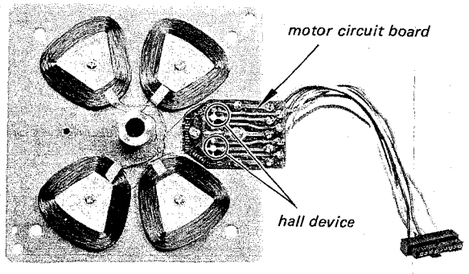
MOTOR REMOVAL









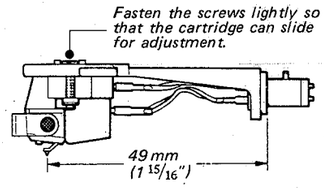


CARTRIDGE REPLACEMENT

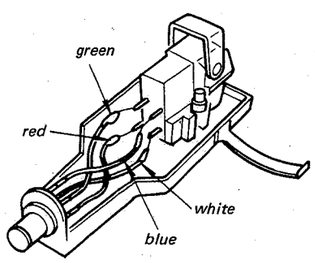
- **AEP Model**

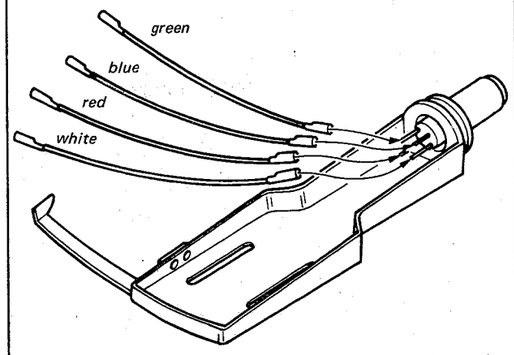
CARTRIDGE INSTALLATION

Install the cartridge into the shell with the mounting screws so that the distance between the shell end and the stylus tip is 49 mm (1 15/16 inches).



LEAD WIRE CONNECTION



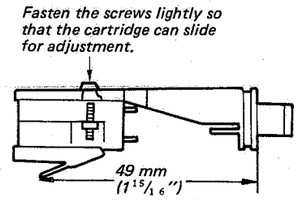


blue: left channel (ground)
white: left channel (signal)
green: right channel (ground)
red: right channel (signal)

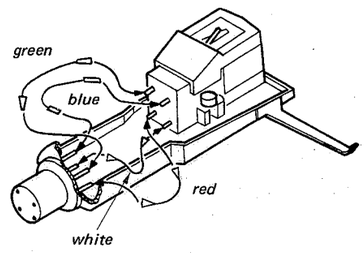
- **E Model**

CARTRIDGE INSTALLATION

Install the cartridge into the shell with the mounting screws so that the distance between the shell end and the stylus tip is 49 mm (1 15/16 inches).



LEAD WIRE CONNECTION



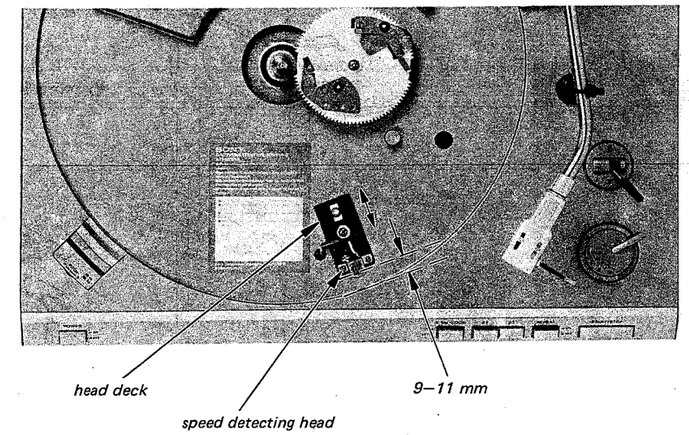
blue: left channel (ground)
white: left channel (signal)
green: right channel (ground)
red: right channel (signal)

SECTION 3
ADJUSTMENTS

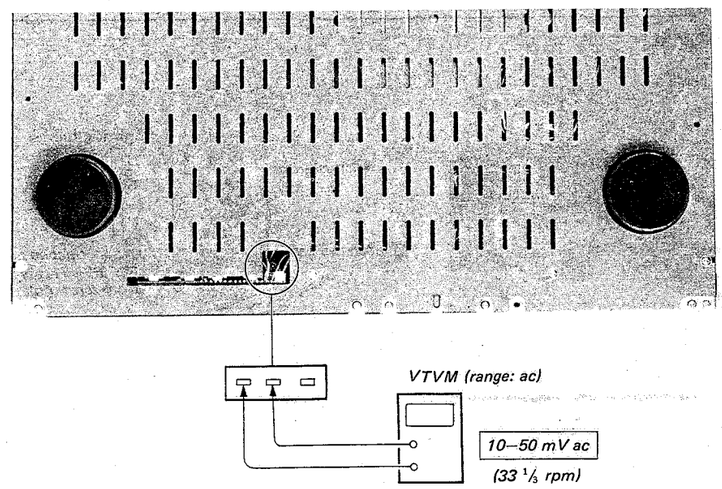
3-1. MECHANICAL ADJUSTMENT

Speed Detecting Head Output Level Adjustment

Before this adjustment, set the speed detecting head on the head holder as shown below.



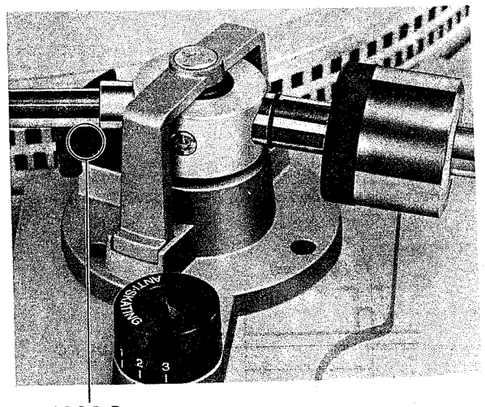
1. Adjust the position of the head holder so that the VTVM reading is 10–50 mV ac at 33 1/3 rpm.
2. Make sure that the head does not touch the turntable and tighten the screws securely.



Note: The clearance between the magnet coated rim and the speed detecting head is more than 0.3 mm.

Stylus Height Adjustment
(POWER switch: OFF)

1. Set the record on the turntable.
2. Automatic Operation
   1) Set the record size selector to MANUAL position.
   2) Bring the tonearm to last groove of the record.
   3) Rotate the turntable clockwise slowly by hand, and the tonearm is lifted up automatically.
   4) Make sure that the clearance between the stylus tip and the record is 4–12 mm ($^3/_{16}$–$^7/_{16}$ inches).
   5) If necessary, loosen the set screw and adjust the lifter height.

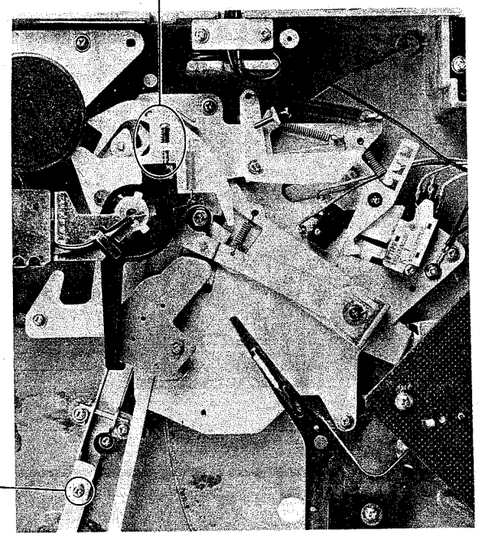


SC 2.6x5 hexagon-socket — *1.27 mm*

3. Manual Operation
   1) Set the record size selector to MANUAL position.
   2) Bring the tonearm on the record.
   3) Lift the cueing lever and make sure that the clearance between the stylus tip and the record is 4–12 mm ($^3/_{16}$–$^7/_{16}$ inches).
   4) If necessary, adjust the lifter height by turning the adjustment screw as shown below.

tuning direction	lifter height
clockwise	up
counterclockwise	down

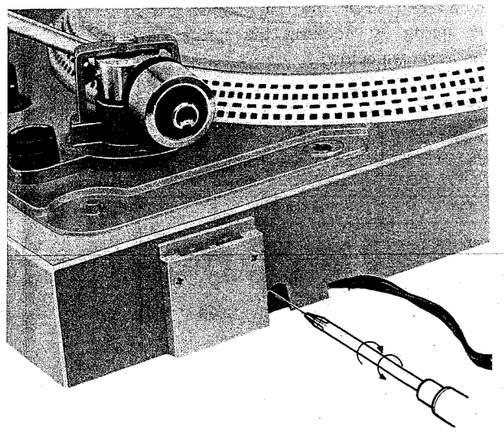
adjustment screw



Automatic Return Position Adjustment
(POWER switch: ON)

1. Set the test record (YFSB-6) on the turntable.
2. Before this adjustment, automatic return must be done.
3. Bring the tonearm to the return test groove of the record.
4. Make sure that the tonearm starts to return at count of 15–17.
5. If necessary, adjust the automatic return position by turning the adjustment screw as shown below.

turning direction	count of return position
clockwise	18 ↑ ↓ 1
counterclockwise	



Stylus Drop-point Adjustment
(POWER switch: ON)

1. Set the test record (YFSC-16) on the turntable.
2. Set the record size selector knob to the 30(12") position and make sure that the stylus gets down on the specified point of the test record.

   Specification:

Record size selector position	Count of drop-point
30 (12")	6 to 10

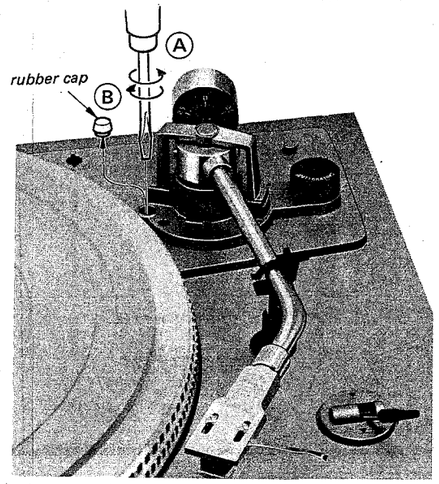
3. If necessary, insert the screwdriver into the hole and adjust the drop-point by turning the adjustment screw.

   To change the drop-point inward:
   Turn the adjustment screw slightly counterclockwise Ⓐ

   To change the drop-point outward:
   Turn the adjustment screw slightly clockwise Ⓑ

4. Once it is properly adjusted with a 30 cm (12") record, the drop-point will be correct for 17 cm (7") and 25 cm (10") records as well.

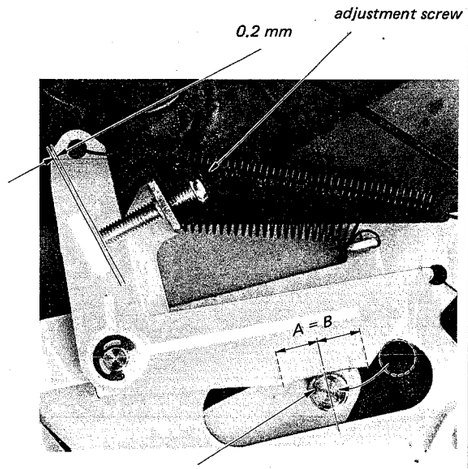
   Note: The stylus drop-point is changed to about 12 mm (½") by one turn of the adjustment screw.



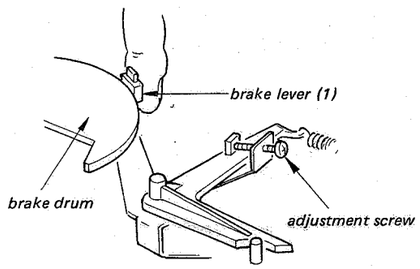
3-2. ELECTRICAL ADJUSTMENTS

Brake Drum Position Adjustment
(POWER switch: OFF)

1. Rotate the drive gear counterclockwise by hand and set the main lever pin as shown below.



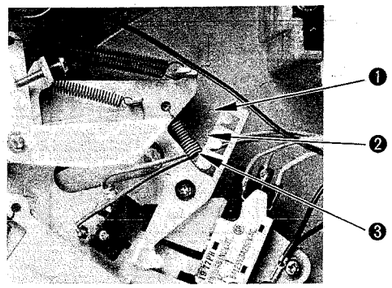
2. Contact the brake lever (1) to the brake drum by loosening the adjustment screw.
3. While pressing the brake lever (1) to the brake drum, tighten the adjustment screw fully clockwise.
4. Then, turn the adjustment screw counterclockwise about 1 turn.

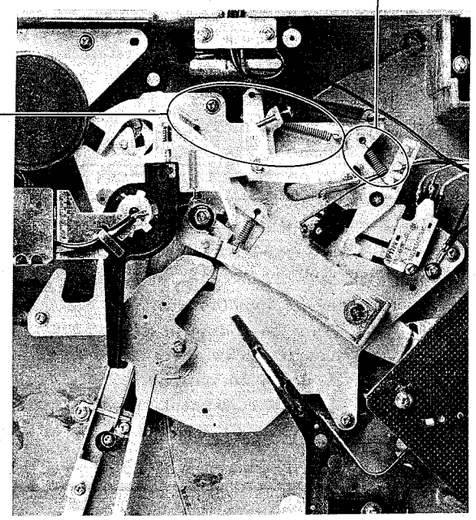


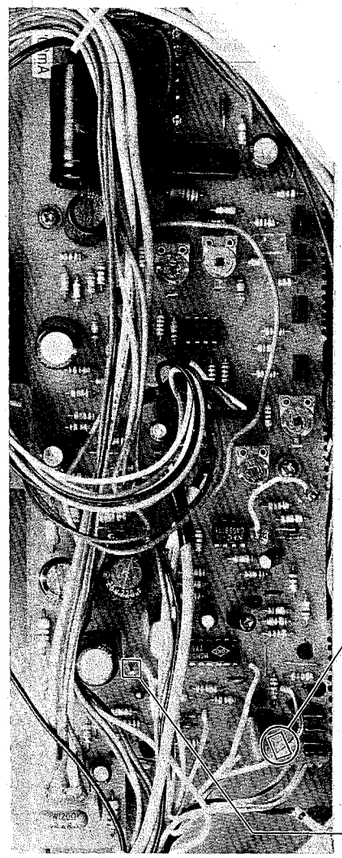
Reset Adjustment

If the tonearm returns during play without depressing teh START/STOP button, adjust the tension of the spring by hooking the spring to stronger position as shown below. .

position	tension
❶	weak ↕ strong
❷	
❸	







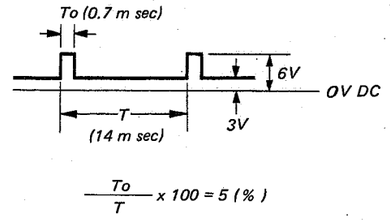
Turntable Speed Adjustment

If correct speed cannot be obtained by adjusting the PITCH controls, adjust RV1.

1. Set the two PITCH control knobs (33 and 45) to the mechanical-mid posiiton.
2. Set the SPEED selector switch to "33" or "45" position and adjust RV1 so that the stroboscope pattern appears stationary.

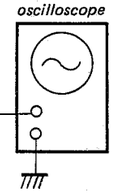
RV1

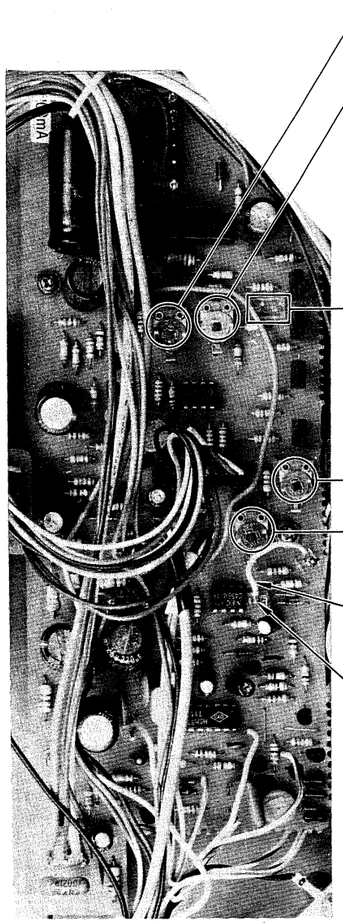
Reference waveform: X'TAL LOCK "ON" 33 rpm



$$\frac{To}{T} \times 100 = 5\ (\%)$$

oscilloscope





RV3 (H1)

RV4 (H2)

RV5 (H1)

RV6 (H2)

Disconnect the white lead wire.

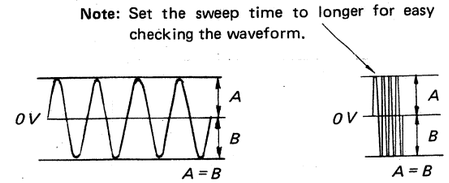
regulated dc power supply (variable) 2 V dc

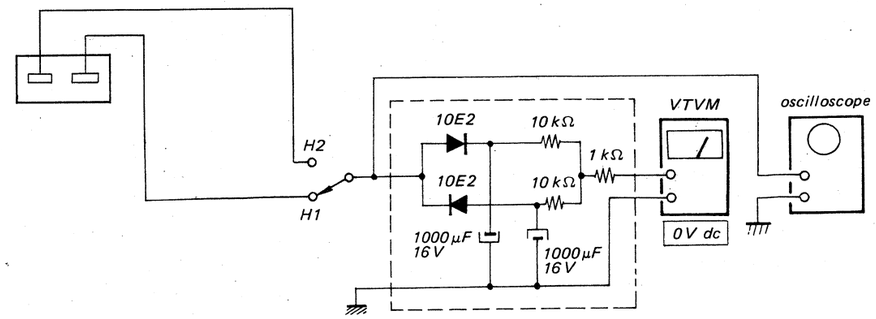
Motor Amp Offset Adjustment (33$^{1}/_{3}$ rpm)

1. Disconnect the white lead wire and connect the regulated power supply as shown below.
2. Connect VTVM or oscilloscope to H1 and adjust RV3 for 0V dc VTVM reading or the waveform on oscilloscope as shown below.
3. Connect VTVM or oscilloscope to H2 and adjust RV4 for 0V dc VTVM reading or the waveform on oscilloscope as shown below.

Waveform on Oscilloscope:

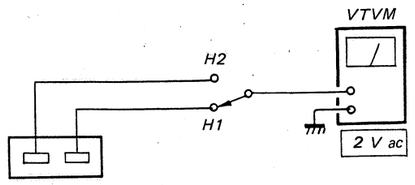
Note: Set the sweep time to longer for easy checking the waveform.





Hall Device Gain Adjustment (33$^{1}/_{3}$ rpm)

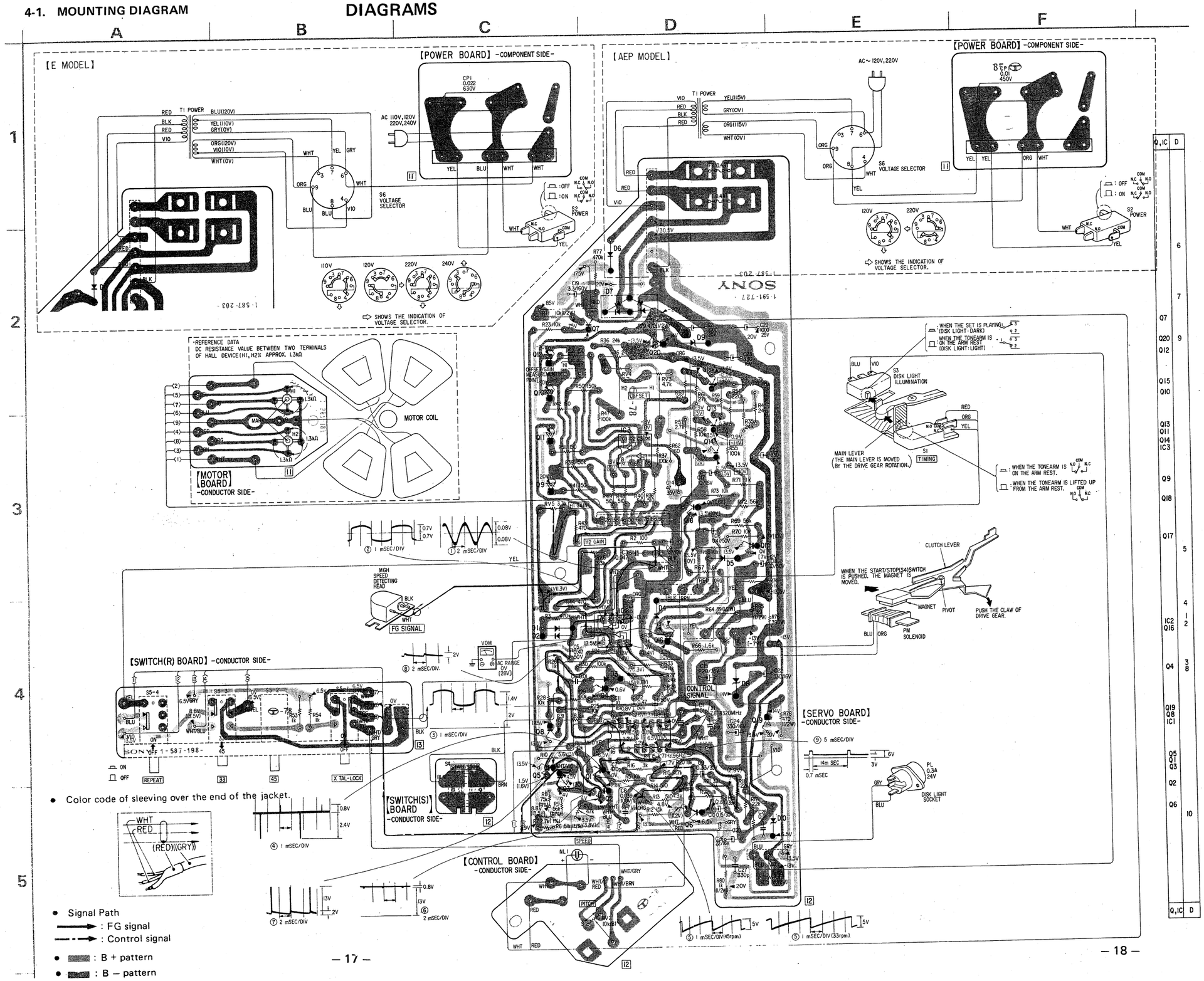
1. Disconnect the white lead wire and connect the regulated power supply as shown below.
2. Connect VTVM to H1 and adjust RV5 for 2V ac reading on VTVM.
3. Connect VTVM to H2 and adjust RV6 for 2V ac reading on VTVM.



SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM

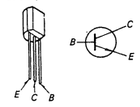
Note: DC resistance measurements are with hall device connected on the circuit board, and are approximate.



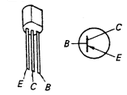
- Color code of sleeving over the end of the jacket.

- Signal Path
  - ——→ : FG signal
  - —·→ : Control signal
- ▬ : B + pattern
- ▬ : B − pattern

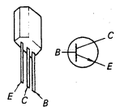
Q1-4
Q6, 13 : 2SC1364 (2SC945)
Q15, 18



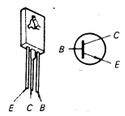
Q5, 8, 14
Q17 : 2SA 678 (2SA733)



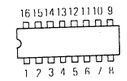
Q7: 2SC926A



Q9, 11: 2SD414

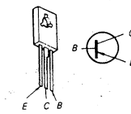


IC1: MSM5818

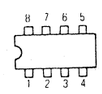


(Top view)

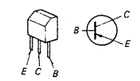
Q10, 12: 2SB548



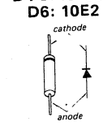
IC2, 3: μPC4558C



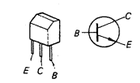
Q16, 20: 2SB605



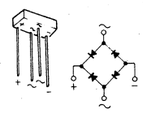
D1-5: IS1555
D6: 10E2



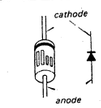
Q19: 2SD571



D7: SIRB10

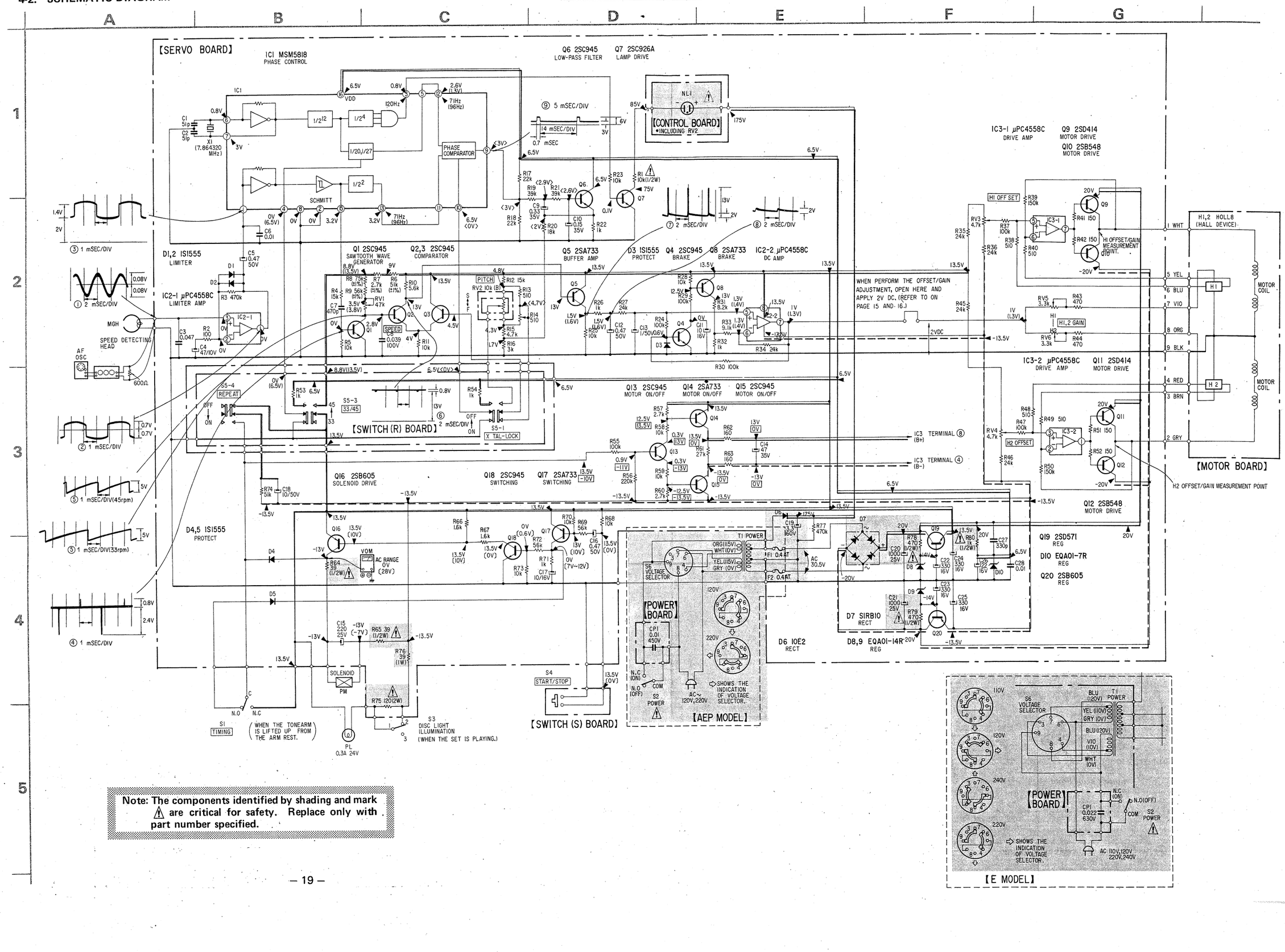


D8, 9: EQB01-14 (EQA01-14R)
D10: EQB01-07 (EQA01-7R)

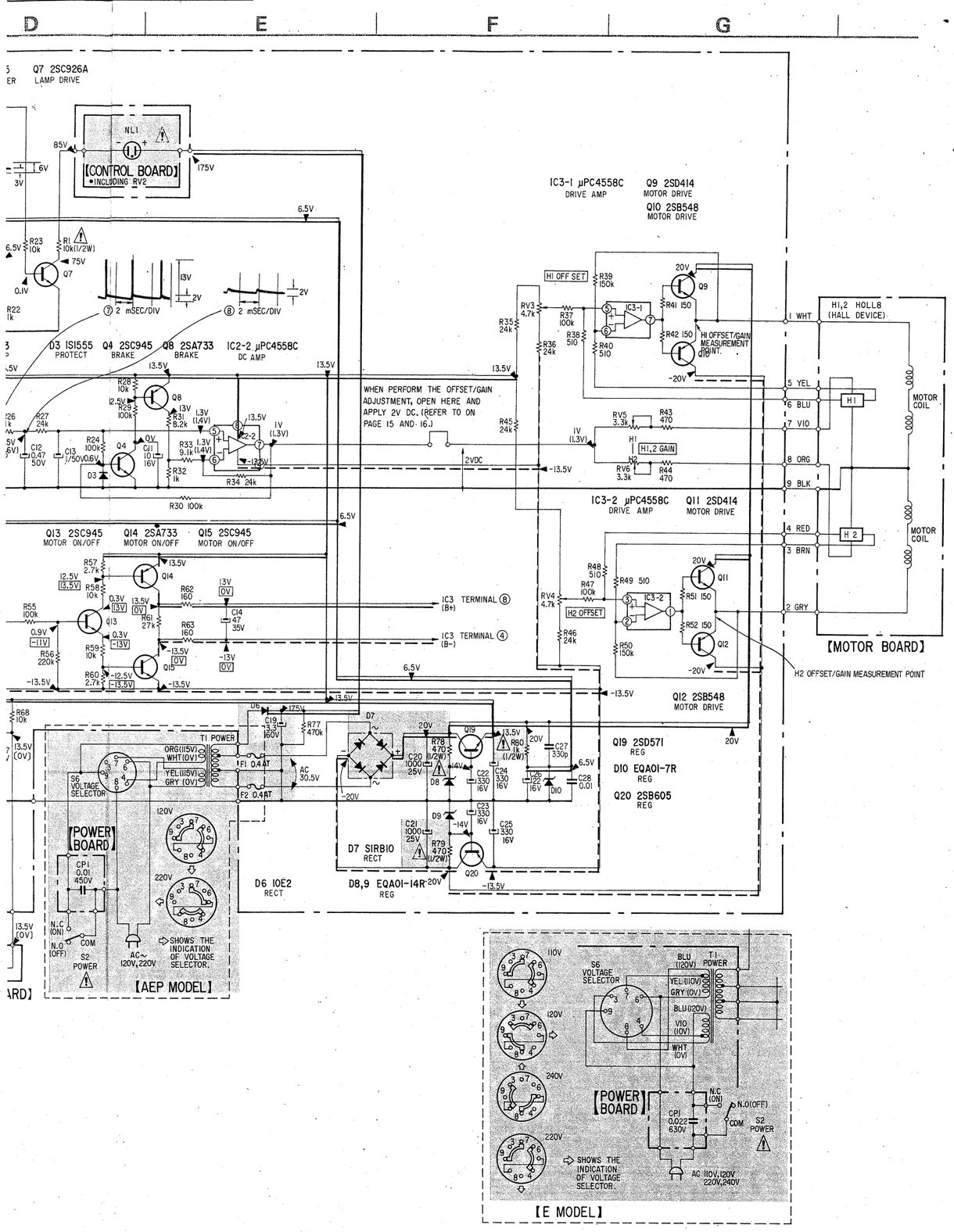


H1, 2: F1409 (HOLL8)

4-2. SCHEMATIC DIAGRAM



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.



NOTE OF SCHEMATIC DIAGRAM

- All capacitors are in μF unless otherwise noted. pF : μμF 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000Ω; MΩ : 1000 kΩ
- % indicates component tolerance.
- ☐ : panel designation.

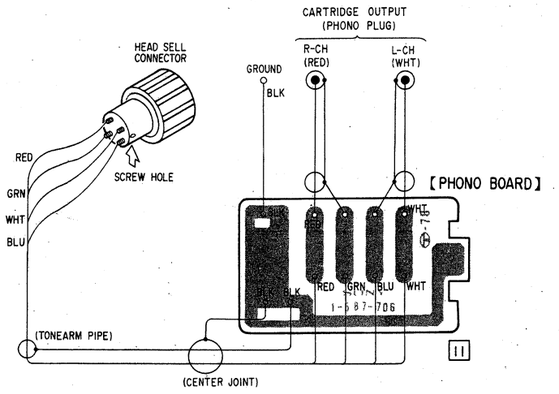
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 20,000-ohm-per-volt VOM.
  - V : 33 rpm
  - (V) : 45 rpm
  - 〈 V〉 : X'TAL LOCK "ON"
  - [V] : START/STOP switch to ON.
  - V : STOP
- ☐ : adjustment for repair.
- ——— : B + bus.
- – – – : B – bus.

- **Switch**

Ref. No.	Switch	Position
S1	TIMING	NO (When the tonearm is on the arm rest.)
S2	POWER	OFF
S3	DISC LIGHT ILLUMINATION	2 (When the tonearm is on the arm rest.)
S4	START/STOP	ON
S5-1	X'TAL-LOCK	ON
S5-2	33/45	45
S5-3	33/45	33
S5-4	REPEAT	OFF
S6	VOLTAGE SELECTOR	

4-3. PHONO BOARD

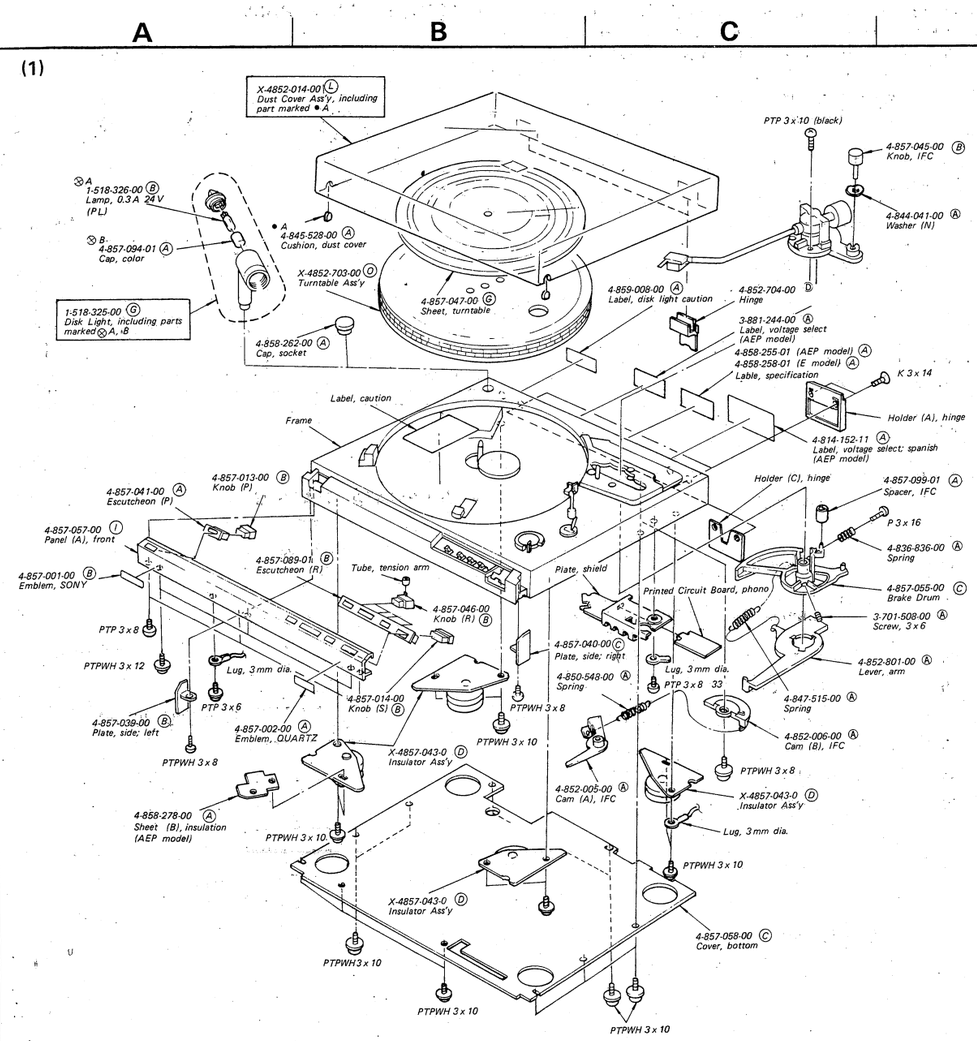
• MOUNTING DIAGRAM



• SCHEMATIC DIAGRAM

SECTION 5
EXPLODED VIEWS

(1)


X-4852-014-00 (L) Dust Cover Ass'y, including part marked • A
⊗A 1-518-326-00 (B) Lamp, 0.3 A 24 V (PL)
⊗B 4-857-094-01 (A) Cap, color
• A 4-845-528-00 (A) Cushion, dust cover
X-4852-703-00 (D) Turntable Ass'y
4-857-047-00 (G) Sheet, turntable
1-518-325-00 (G) Disk Light, including parts marked ⊗A, ⊗B
4-858-262-00 (A) Cap, socket
PTP 3 x 10 (black)
4-857-045-00 (B) Knob, IFC
4-844-041-00 (A) Washer (N)
4-859-008-00 (A) Label, disk light caution
4-852-704-00 Hinge
3-881-244-00 (A) Label, voltage select (AEP model)
4-858-255-01 (AEP model) (A)
4-858-258-01 (E model) (A)
Lable, specification
K 3 x 14
Holder (A), hinge
Label, caution
Frame
4-814-152-11 (A) Label, voltage select: spanish (AEP model)
4-857-041-00 (A) Escutcheon (P)
4-857-013-00 (B) Knob (P)
4-857-057-00 (I) Panel (A), front
4-857-089-01 (B) Escutcheon (R)
4-857-001-00 (B) Emblem, SONY
Tube, tension arm
Holder (C), hinge
4-857-099-01 (A) Spacer, IFC
P 3 x 16
4-836-836-00 (A) Spring
Plate, shield
Printed Circuit Board, phono
4-857-055-00 (C) Brake Drum
3-701-508-00 (A) Screw, 3 x 6
4-857-046-00 Knob (R) (B)
PTP 3 x 8
PTPWH 3 x 12
Lug, 3 mm dia.
PTP 3 x 6
4-857-040-00 (C) Plate, side; right
4-850-548-00 (A) Spring
Lug, 3 mm dia.
PTP 3 x 8
33
4-852-801-00 (A) Lever, arm
4-847-515-00 (A) Spring
4-857-039-00 (B) Plate, side; left
4-857-002-00 (A) Emblem, QUARTZ
4-857-014-00 Knob (S) (B)
PTPWH 3 x 8
PTPWH 3 x 10
X-4857-043-0 (D) Insulator Ass'y
4-852-006-00 (A) Cam (B), IFC
PTPWH 3 x 8
4-852-005-00 (A) Cam (A), IFC
X-4857-043-0 (D) Insulator Ass'y
4-858-278-00 (A) Sheet (B), insulation (AEP model)
Lug, 3 mm dia.
PTPWH 3 x 10
PTPWH 3 x 10
X-4857-043-0 (D) Insulator Ass'y
4-857-058-00 (C) Cover, bottom
PTPWH 3 x 10
PTPWH 3 x 10

Note:

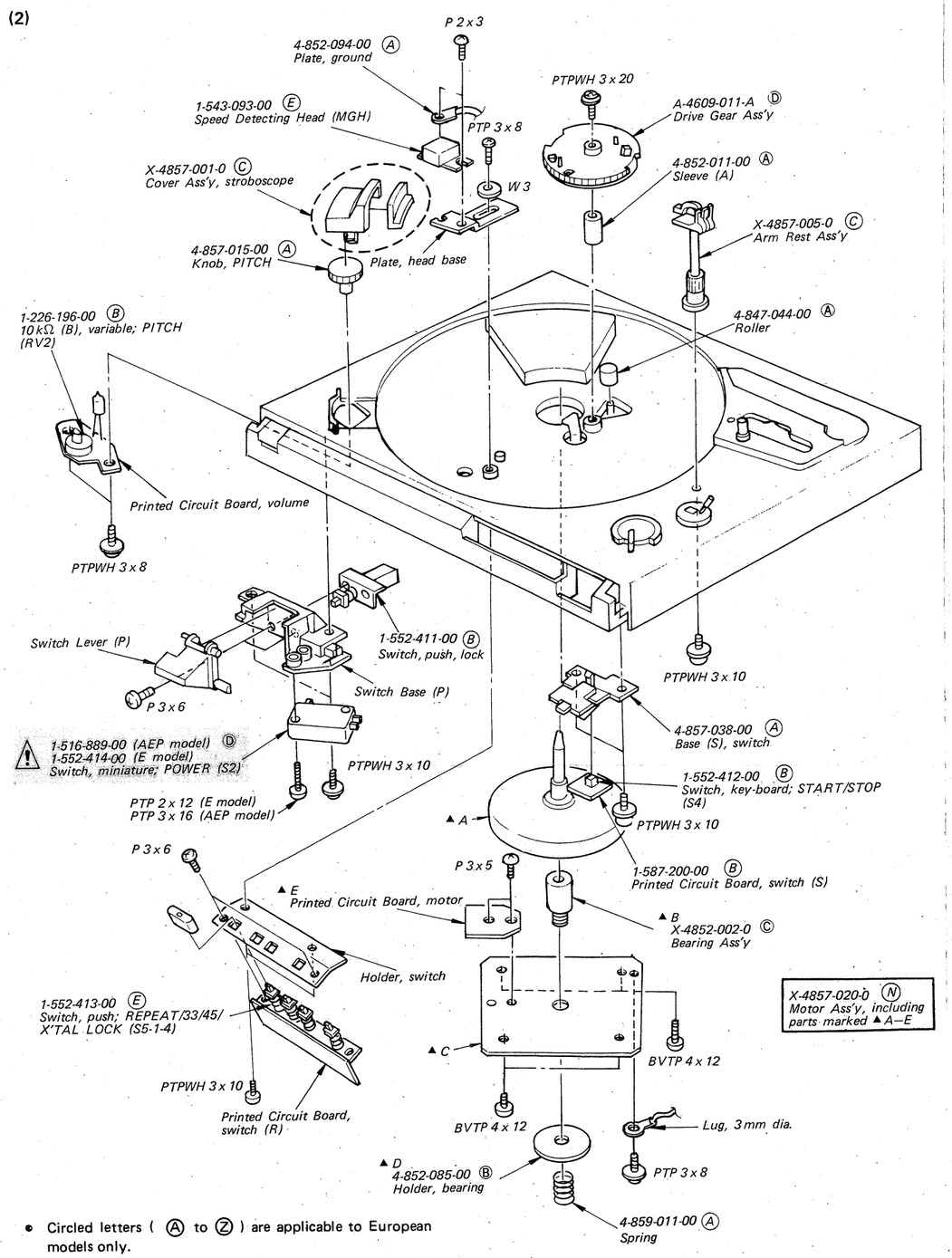
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

(2)

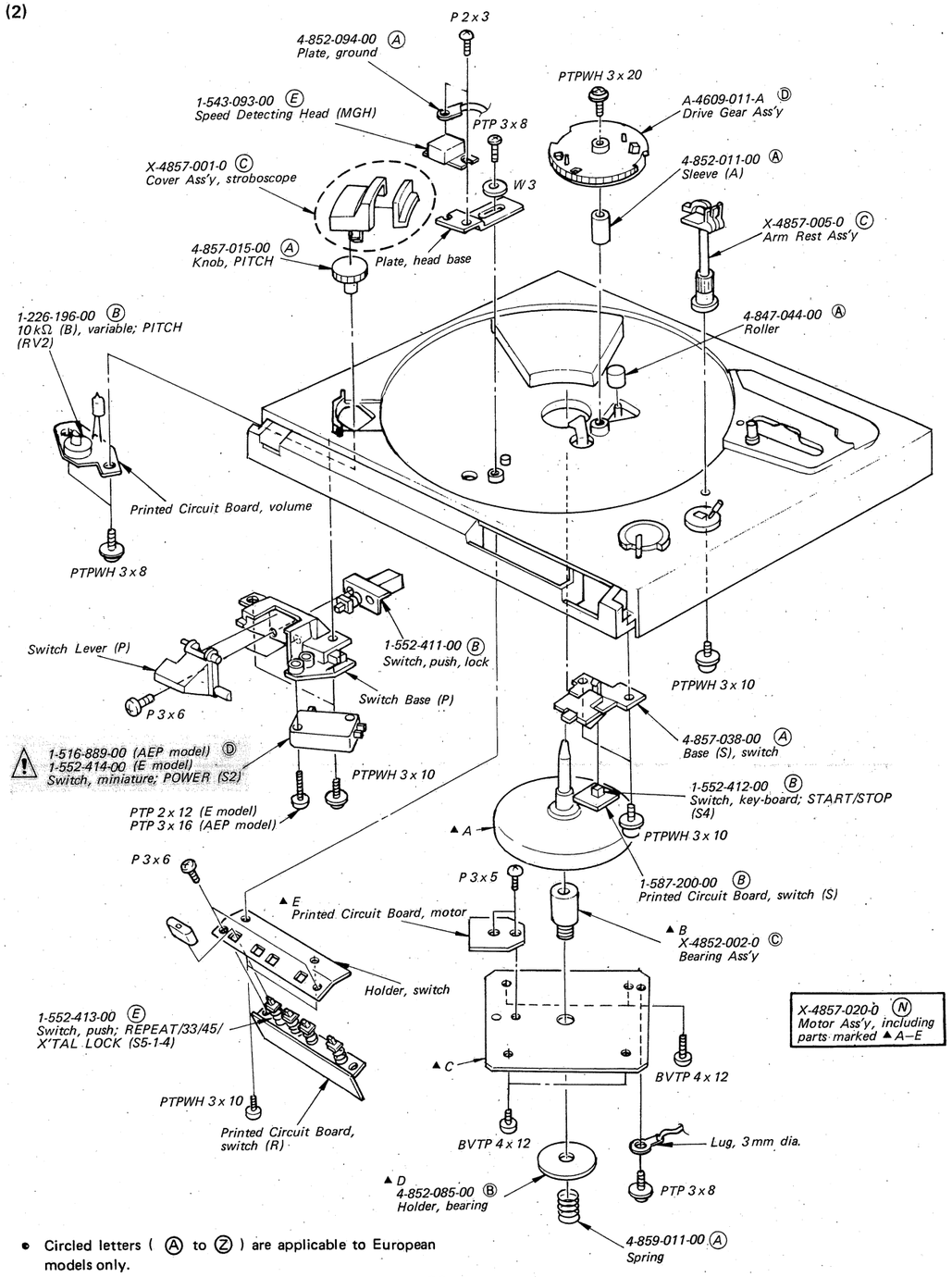

P 2 x 3
4-852-094-00 (A) Plate, ground
PTPWH 3 x 20
1-543-093-00 (E) Speed Detecting Head (MGH)
PTP 3 x 8
A-4609-011-A (D) Drive Gear Ass'y
X-4857-001-0 (C) Cover Ass'y, stroboscope
W 3
4-852-011-00 (A) Sleeve (A)
4-857-015-00 (A) Knob, PITCH
Plate, head base
X-4857-005-0 (C) Arm Rest Ass'y
1-226-196-00 (B) 10 kΩ (B), variable; PITCH (RV2)
4-847-044-00 (A) Roller
Printed Circuit Board, volume
PTPWH 3 x 8
Switch Lever (P)
1-552-411-00 (B) Switch, push, lock
P 3 x 6
Switch Base (P)
PTPWH 3 x 10
4-857-038-00 (A) Base (S), switch
⚠ 1-516-889-00 (AEP model) (D)
1-552-414-00 (E model)
Switch, miniature; POWER (S2)
PTPWH 3 x 10
1-552-412-00 (B) Switch, key-board; START/STOP (S4)
PTP 2 x 12 (E model)
PTP 3 x 16 (AEP model)
▲A
PTPWH 3 x 10
P 3 x 6
P 3 x 5
1-587-200-00 (B) Printed Circuit Board, switch (S)
▲E Printed Circuit Board, motor
▲B X-4852-002-0 (C) Bearing Ass'y
Holder, switch
1-552-413-00 (E) Switch, push; REPEAT/33/45/ X'TAL LOCK (S5-1-4)
▲C
BVTP 4 x 12
X-4857-020-0 (N) Motor Ass'y, including parts marked ▲A–E
PTPWH 3 x 10
Printed Circuit Board, switch (R)
BVTP 4 x 12
Lug, 3 mm dia.
▲D 4-852-085-00 (B) Holder, bearing
PTP 3 x 8
4-859-011-00 (A) Spring

- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (—) = slotted head

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

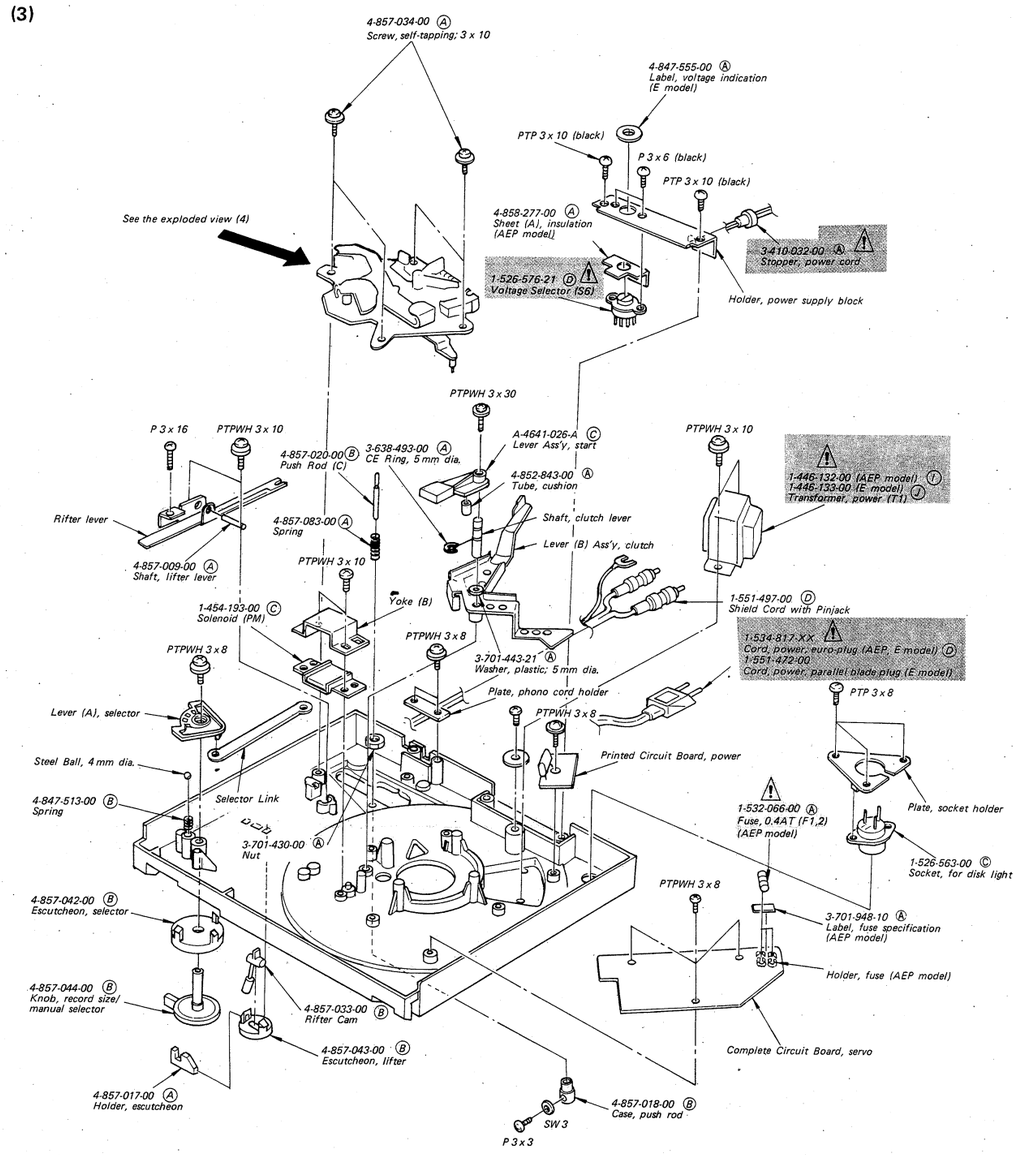
(2)


P 2 x 3
4-852-094-00 (A) Plate, ground
PTPWH 3 x 20
1-543-093-00 (E) Speed Detecting Head (MGH)
PTP 3 x 8
A-4609-011-A (D) Drive Gear Ass'y
X-4857-001-0 (C) Cover Ass'y, stroboscope
W 3
4-852-011-00 (A) Sleeve (A)
4-857-015-00 (A) Knob, PITCH
Plate, head base
X-4857-005-0 (C) Arm Rest Ass'y
1-226-196-00 (B) 10 kΩ (B), variable; PITCH (RV2)
4-847-044-00 (A) Roller
Printed Circuit Board, volume
PTPWH 3 x 8
Switch Lever (P)
1-552-411-00 (B) Switch, push, lock
Switch Base (P)
P 3 x 6
1-516-889-00 (AEP model) (D)
1-552-414-00 (E model)
Switch, miniature; POWER (S2)
PTPWH 3 x 10
PTP 2 x 12 (E model)
PTP 3 x 16 (AEP model)
PTPWH 3 x 10
4-857-038-00 (A) Base (S), switch
▲A
1-552-412-00 (B) Switch, key-board; START/STOP (S4)
PTPWH 3 x 10
P 3 x 6
P 3 x 5
▲E Printed Circuit Board, motor
1-587-200-00 (B) Printed Circuit Board, switch (S)
▲B X-4852-002-0 (C) Bearing Ass'y
Holder, switch
1-552-413-00 (E) Switch, push; REPEAT/33/45/ X'TAL LOCK (S5-1-4)
▲C
BVTP 4 x 12
PTPWH 3 x 10
Printed Circuit Board, switch (R)
BVTP 4 x 12
Lug, 3 mm dia.
▲D 4-852-085-00 (B) Holder, bearing
PTP 3 x 8
4-859-011-00 (A) Spring

X-4857-020-0 (N) Motor Ass'y, including parts marked ▲A–E

- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

(3)


4-857-034-00 (A) Screw, self-tapping; 3 x 10
4-847-555-00 (A) Label, voltage indication (E model)
PTP 3 x 10 (black)
P 3 x 6 (black)
PTP 3 x 10 (black)
See the exploded view (4)
4-858-277-00 (A) Sheet (A), insulation (AEP model)
3-410-032-00 (A) ⚠ Stopper, power cord
1-526-576-21 (D) ⚠ Voltage Selector (S6)
Holder, power supply block
PTPWH 3 x 30
P 3 x 16
PTPWH 3 x 10
4-857-020-00 (B) Push Rod (C)
3-638-493-00 (A) CE Ring, 5 mm dia.
A-4641-026-A (C) Lever Ass'y, start
PTPWH 3 x 10
⚠ 1-446-132-00 (AEP model) (T)
1-446-133-00 (E model) (J)
Transformer, power (T1)
4-852-843-00 (A) Tube, cushion
Rifter lever
4-857-083-00 (A) Spring
Shaft, clutch lever
Lever (B) Ass'y, clutch
4-857-009-00 (A) Shaft, lifter lever
PTPWH 3 x 10
1-454-193-00 (C) Solenoid (PM)
Yoke (B)
PTPWH 3 x 8
1-551-497-00 (D) Shield Cord with Pinjack
1-534-817-XX ⚠ Cord, power; euro-plug (AEP, E model) (D)
1-551-472-00 Cord, power; parallel blade plug (E model)
PTPWH 3 x 8
3-701-443-21 (A) Washer, plastic; 5 mm dia.
Plate, phono cord holder
PTP 3 x 8
Lever (A), selector
PTPWH 3 x 8
Printed Circuit Board, power
Steel Ball, 4 mm dia.
Selector Link
4-847-513-00 (B) Spring
3-701-430-00 (A) Nut
⚠ 1-532-066-00 (A) Fuse, 0.4AT (F1,2) (AEP model)
Plate, socket holder
1-526-563-00 (C) Socket, for disk light
4-857-042-00 (B) Escutcheon, selector
PTPWH 3 x 8
3-701-948-10 (A) Label, fuse specification (AEP model)
Holder, fuse (AEP model)
4-857-044-00 (B) Knob, record size/ manual selector
4-857-033-00 (B) Rifter Cam
Complete Circuit Board, servo
4-857-043-00 (B) Escutcheon, lifter
4-857-017-00 (A) Holder, escutcheon
4-857-018-00 (B) Case, push rod
SW 3
P 3 x 3

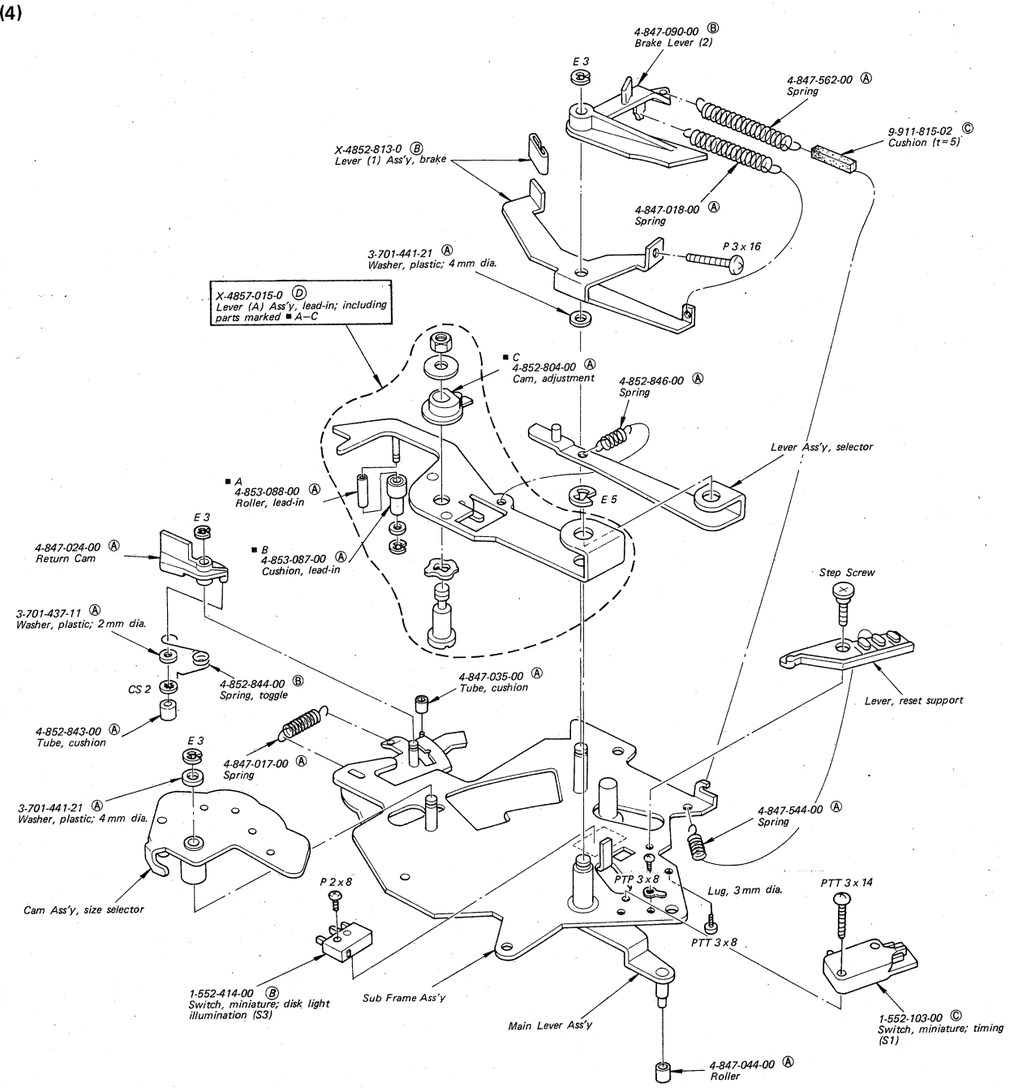
Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (—) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

3-4

(4)

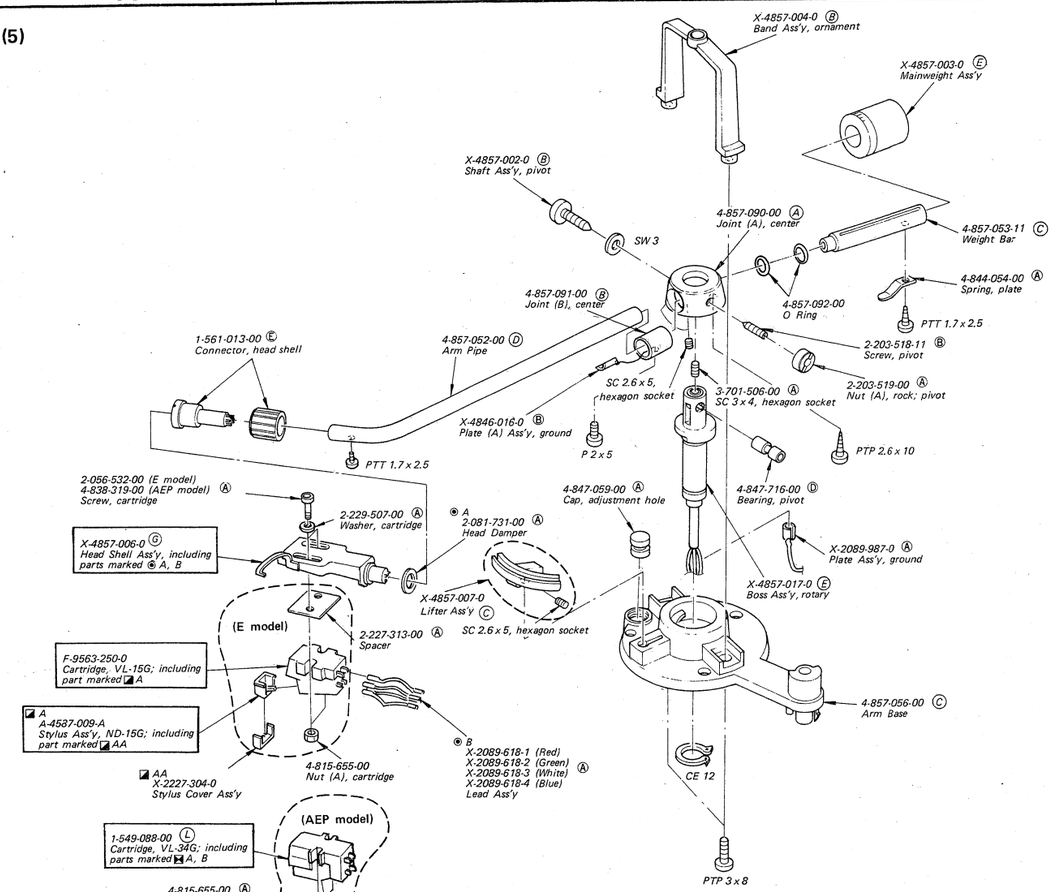


Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (—) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

3-5.

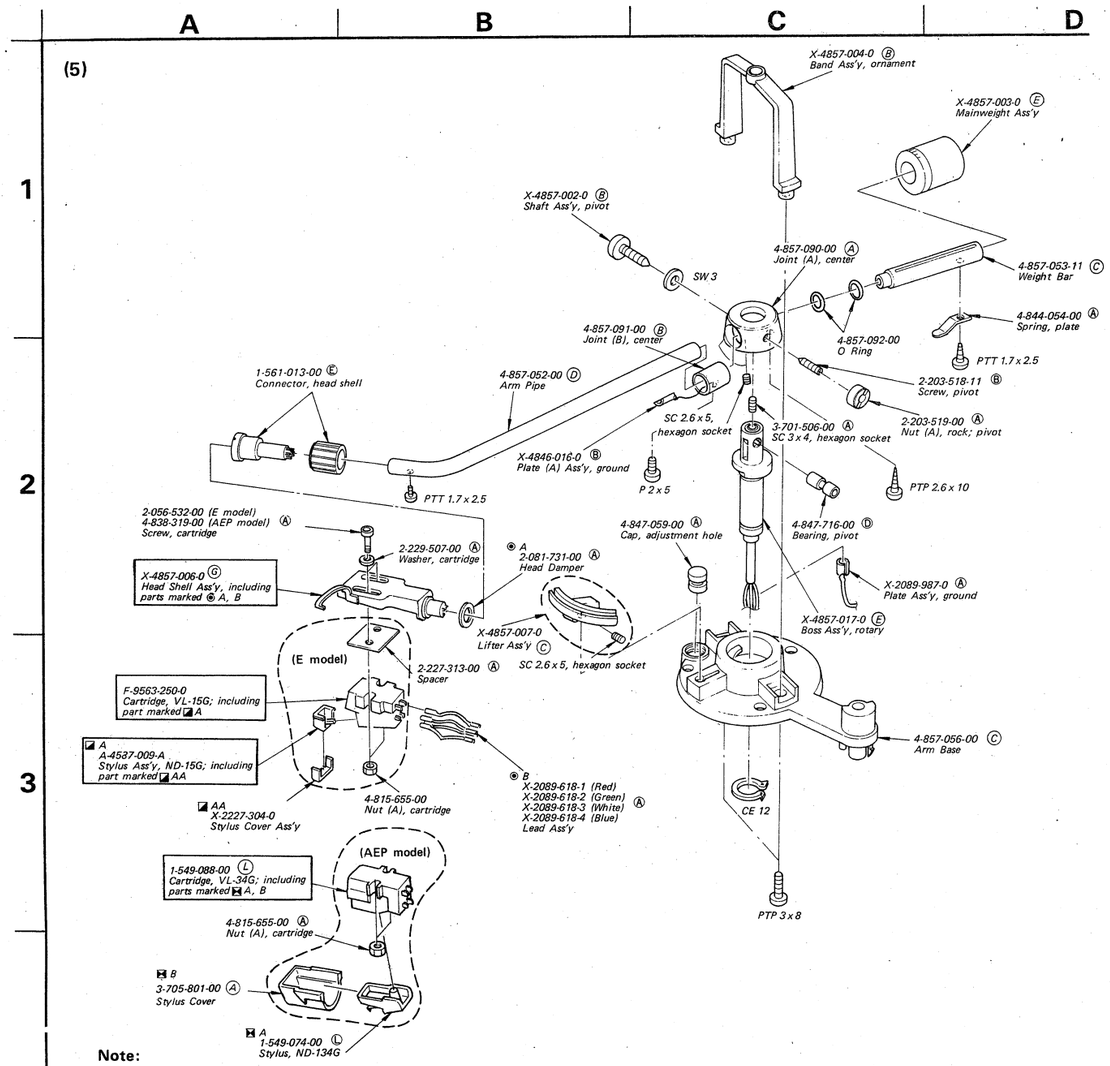
(5)



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (—) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

3-5.


(5)
X-4857-004-0 (B) Band Ass'y, ornament
X-4857-003-0 (E) Mainweight Ass'y
X-4857-002-0 (B) Shaft Ass'y, pivot
SW 3
4-857-090-00 (A) Joint (A), center
4-857-053-11 (C) Weight Bar
4-844-054-00 (A) Spring, plate
PTT 1.7 x 2.5
4-857-091-00 (B) Joint (B), center
4-857-092-00 O Ring
1-561-013-00 (E) Connector, head shell
4-857-052-00 (D) Arm Pipe
2-203-518-11 (B) Screw, pivot
SC 2.6 x 5, hexagon socket
3-701-506-00 (A) SC 3 x 4, hexagon socket
2-203-519-00 (A) Nut (A), rock; pivot
X-4846-016-0 (B) Plate (A) Ass'y, ground
P 2 x 5
PTP 2.6 x 10
PTT 1.7 x 2.5
2-056-532-00 (E model) 4-838-319-00 (AEP model) (A) Screw, cartridge
2-229-507-00 (A) Washer, cartridge
4-847-059-00 (A) Cap, adjustment hole
4-847-716-00 (D) Bearing, pivot
◉ A 2-081-731-00 (A) Head Damper
X-4857-006-0 (G) Head Shell Ass'y, including parts marked ◉ A, B
X-2089-987-0 (A) Plate Ass'y, ground
X-4857-007-0 Lifter Ass'y (C)
X-4857-017-0 (E) Boss Ass'y, rotary
SC 2.6 x 5, hexagon socket
(E model)
2-227-313-00 (A) Spacer
F-9563-250-0 Cartridge, VL-15G; including part marked ◪ A
4-857-056-00 (C) Arm Base
◪ A A-4537-009-A Stylus Ass'y, ND-15G; including part marked ◪ AA
◉ B X-2089-618-1 (Red) X-2089-618-2 (Green) X-2089-618-3 (White) X-2089-618-4 (Blue) (A) Lead Ass'y
CE 12
◪ AA X-2227-304-0 Stylus Cover Ass'y
4-815-655-00 Nut (A), cartridge
PTP 3 x 8
(AEP model)
1-549-088-00 (L) Cartridge, VL-34G; including parts marked ◪ A, B
4-815-655-00 (A) Nut (A), cartridge
◪ B 3-705-801-00 (A) Stylus Cover
◪ A 1-549-074-00 (L) Stylus, ND-134G

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (—) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

SECTION 6
ELECTRICAL PARTS LIST

- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description
		SEMICONDUCTORS
		Transistors
⇒ Q1 – 4	8-729-663-47	Ⓑ 2SC1364
⇒ Q5	8-727-788-00	Ⓑ 2SA678
⇒ Q6	8-729-663-47	Ⓑ 2SC1364
Q7	8-720-950-03	Ⓒ 2SC926A
⇒ Q8	8-727-788-00	Ⓑ 2SA678
Q9	8-729-141-43	Ⓑ 2SD414
Q10	8-729-154-83	Ⓑ 2SB548
Q11	8-729-141-43	Ⓑ 2SD414
Q12	8-729-154-83	Ⓑ 2SB548
⇒ Q13	8-729-663-47	Ⓑ 2SC1364
⇒ Q14	8-727-788-00	Ⓑ 2SA678
⇒ Q15	8-729-663-47	Ⓑ 2SC1364
Q16	8-729-160-51	Ⓑ 2SB605
⇒ Q17	8-727-788-00	Ⓑ 2SA678
⇒ Q18	8-729-663-47	Ⓑ 2SC1364
Q19	8-729-157-11	Ⓑ 2SD571
Q20	8-729-160-51	Ⓑ 2SB605
		ICs
IC1	8-759-958-18	Ⓚ MSM5818
IC2, 3	8-759-145-58	Ⓓ μPC4558C
		Diodes
D1 – 5	8-719-815-55	Ⓑ 1S1555
D6	⚠ 8-719-200-02	Ⓑ 10E2
D7	⚠ 8-719-510-10	Ⓒ SIRB10
⇒ D8, 9	8-719-931-14	Ⓑ EQB01-14
⇒ D10	8-719-931-07	Ⓑ EQB01-07
⇒ H1, 2	8-719-814-09	Ⓓ F1409

- ⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description		
		CAPACITORS		
		• All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics. pF = μμF, elect = electrolytic		
C1, 2	1-102-491-11	Ⓐ 51p		
C3	1-101-006-11	Ⓐ 0.047		
C4	1-121-409-11	Ⓐ 47	10V	elect
C5	1-121-951-11	Ⓐ 0.47	50V	elect
C6	1-101-004-11	Ⓐ 0.01		
C7	1-102-114-11	Ⓐ 470p		
C8	1-130-140-11	Ⓑ 0.039	100V	polyethylene
C9	1-131-212-11	Ⓑ 0.33	35V	elect
C10	1-131-210-11	Ⓑ 0.15	35V	elect
C11	1-121-651-11	Ⓐ 10	16V	elect
C12	1-121-951-11	Ⓐ 0.47	50V	elect
C13	1-121-952-11	Ⓐ 1	50V	elect
C14	1-123-058-11	Ⓐ 47	35V	elect
C15	1-121-936-11	Ⓑ 220	25V	elect
C16	1-121-951-11	Ⓐ 0.47	50V	elect
C17	1-121-651-11	Ⓐ 10	16V	elect
C18	1-121-738-11	Ⓐ 10	50V	elect
C19	⚠ 1-123-004-11	Ⓑ 3.3	160V	elect
C20, 21	⚠ 1-123-066-11	Ⓑ 1000	25V	elect
C22 – 25	1-123-069-11	Ⓑ 330	16V	elect
C26	1-121-479-11	Ⓐ 22	16V	elect
C27	1-102-112-11	Ⓐ 330p		
C28	1-101-004-11	Ⓐ 0.01		
CP1	⚠ 1-115-148-11	Ⓒ 0.01	450V	paper (AEP model)
CP1	⚠ 1-129-718-00	Ⓓ 0.022	630V	polyethylene (E model)
		RESISTORS		
		All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on the last page for their part numbers.		
R1	⚠ 1-244-897-11	Ⓐ 10k	½W	carbon
R6	1-214-173-11	Ⓐ 51k ±1% ¼W		metal oxide
R7	1-214-142-11	Ⓐ 2.7k ±1% ¼W		metal oxide
R8	1-214-177-11	Ⓐ 75k ±1% ¼W		metal oxide
R9	1-214-174-11	Ⓐ 56k ±1% ¼W		metal oxide

Ref. No.	Part No.	Description		
R64, 65	⚠1-244-839-11	Ⓐ 39	½W	carbon
R75	⚠1-207-913-11	Ⓑ 120	2W	wire wound (nonflammable)
R76	⚠1-213-126-11	Ⓐ 39	1W	metal oxide (nonflammable)
R78, 79	⚠1-244-865-11	Ⓐ 470	½W	carbon
R80	⚠1-244-873-11	Ⓐ 1k	½W	carbon
RV1	1-224-254-XX	Ⓑ 47k, adjustable; SPEED		
RV2	1-226-196-00	Ⓑ 10k(B), variable; PITCH		
RV3, 4	1-224-644-XX	Ⓑ 4.7k, adjustable; OFFSET		
RV5, 6	1-224-644-XX	Ⓑ 4.7k adjustable; GAIN		

SWITCHES

S1	1-552-103-00	Ⓒ miniature; TIMING
S2	⚠1-516-889-00	Ⓓ miniature; POWER (AEP model)
S2	⚠1-552-414-00	miniature; POWER (E model)
S3	1-552-414-00	Ⓑ miniature; disk light illumination
S4	1-552-412-00	Ⓑ key-board; START/STOP
S5-1 – 4	1-552-413-00	Ⓔ push; REPEAT/33/45/ X' TAL-LOCK
S6	⚠1-526-576-21	Ⓓ Voltage selector

MISCELLANEOUS

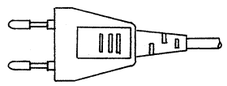
F1, 2	⚠1-532-066-00	Ⓐ Fuse, 0.4AT (AEP model)
MGH	1-543-093-00	Ⓔ Speed Detecting Head
NL1	⚠1-519-152-00	Ⓑ Lamp, neon
PM	1-454-193-00	Ⓒ Solenoid
T1	⚠1-446-132-00	Ⓘ Transformer, power (AEP model)
T1	⚠1-446-133-00	Transformer, power (E model)
X1	1-527-348-00	Ⓓ Crystal, 7.864320 MHz
	1-518-325-00	Ⓖ Disk Light
	including:	
PL	1-518-326-00	Ⓑ Lamp, 0.3A 24V
	4-857-094-01	Ⓐ Cap, color
	1-526-563-00	Ⓒ Socket, for disk light
	⚠1-534-817-XX	Ⓔ Cord, power; euro-plug (AEP, E model)

• Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

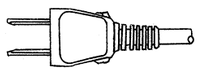
Ref. No.	Part No.	Description
	1-549-088-00	Ⓛ Cartridge, VL-34G (AEP model)
	including:	
	1-549-074-00	Ⓛ Stylus, ND-134G (AEP model)
	3-705-801-00	Ⓐ Stylus Cover (AEP model)
	⚠1-551-472-00	Cord, power; parallel blade plug (E model)
	1-551-497-00	Ⓓ Shield Cord with Pinjack
	1-552-411-00	Ⓑ Switch, push; lock
	1-561-013-00	Ⓔ Connector, head shell
	1-587-200-00	Ⓑ Printed Circuit Board, Switch (S)

— Power Cord —

euro-plug (1-534-817-XX)



parallel blade plug (1-551-472-00)



PACKING MATERIALS AND ACCESSORIES

Ref. No.	Description
X-4857-003-0	Ⓔ Weight Ass'y, main
2-054-619-00	Ⓐ Spacer, cartridge
3-701-616-00	Ⓐ Bag, polyethylene
3-701-630-00	Ⓐ Bag, polyethylene
3-701-634-00	Ⓐ Bag, polyethylene
3-701-806-00	Ⓐ Adaptor, 45 rpm
3-770-584-11	Ⓔ Manual, instruction
3-793-395-11	Ⓑ Gauge, tracking error
3-794-123-11	Ⓐ Label, caution
4-843-577-02	Ⓐ Sheet, protection, dust cover
4-847-092-00	Ⓒ Screwdriver
4-847-314-00	Ⓒ Bag, polyethylene; main
4-852-078-00	Ⓑ Holder, turntable
4-852-080-00	Ⓑ Cushion, upper
4-852-081-00	Ⓑ Cushion, lower
4-853-409-00	Ⓑ Cushion, arm
4-857-047-00	Ⓖ Sheet, turntable
4-858-284-00	Ⓔ Carton

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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9.

Screw:

Reference Designation
P
PWH
PS PSP
PSW PSPW
R
K
RK
B
T
F
RF
BV

PACKING MATERIALS AND ACCESSORIES

Ref. No.	*Description*
X-4857-003-0	Ⓔ Weight Ass'y, main
2-054-619-00	Ⓐ Spacer, cartridge
3-701-616-00	Ⓐ Bag, polyethylene
3-701-630-00	Ⓐ Bag, polyethylene
3-701-634-00	Ⓐ Bag, polyethylene
3-701-806-00	Ⓐ Adaptor, 45 rpm
3-770-584-11	Ⓔ Manual, instruction
3-793-395-11	Ⓑ Gauge, tracking error
3-794-123-11	Ⓐ Label, caution
4-843-577-02	Ⓐ Sheet, protection, dust cover
4-847-092-00	Ⓒ Screwdriver
4-847-314-00	Ⓒ Bag, polyethylene; main
4-852-078-00	Ⓑ Holder, turntable
4-852-080-00	Ⓑ Cushion, upper
4-852-081-00	Ⓑ Cushion, lower
4-853-409-00	Ⓑ Cushion, arm
4-857-047-00	Ⓖ Sheet, turntable
4-858-284-00	Ⓔ Carton

1/4 WATT CARBON RESISTORS Ⓐ

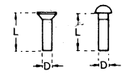
Note: Circled letter Ⓐ is applicable to European models only.

Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*
1.0	1-244-601-11	10	1-244-625-11	100	1-244-649-11	1.0k	1-244-673-11	10 k	1-244-697-11	100k	1-244-721-11	1.0M	1-244-745-11
1.1	1-244-602-11	11	1-244-626-11	110	1-244-650-11	1.1k	1-244-674-11	11 k	1-244-698-11	110k	1-244-722-11	1.1M	1-244-746-11
1.2	1-244-603-11	12	1-244-627-11	120	1-244-651-11	1.2k	1-244-675-11	12 k	1-244-699-11	120k	1-244-723-11	1.2M	1-244-747-11
1.3	1-244-604-11	13	1-244-628-11	130	1-244-652-11	1.3k	1-244-676-11	13 k	1-244-700-11	130k	1-244-724-11	1.3M	1-244-748-11
1.5	1-244-605-11	15	1-244-629-11	150	1-244-653-11	1.5k	1-244-677-11	15 k	1-244-701-11	150k	1-244-725-11	1.5M	1-244-749-11
1.6	1-244-606-11	16	1-244-630-11	160	1-244-654-11	1.6k	1-244-678-11	16 k	1-244-702-11	160k	1-244-726-11	1.6M	1-244-750-11
1.8	1-244-607-11	18	1-244-631-11	180	1-244-655-11	1.8k	1-244-679-11	18 k	1-244-703-11	180k	1-244-737-11	1.8M	1-244-751-11
2.0	1-244-608-11	20	1-244-632-11	200	1-244-656-11	2.0k	1-244-680-11	20 k	1-244-704-11	200k	1-244-728-11	2.0M	1-244-752-11
2.2	1-244-609-11	22	1-244-633-11	220	1-244-657-11	2.2k	1-244-681-11	22 k	1-244-705-11	220k	1-244-729-11	2.2M	1-244-753-11
2.4	1-244-610-11	24	1-244-634-11	240	1-244-658-11	2.4k	1-244-682-11	24 k	1-244-706-11	240k	1-244-730-11	2.4M	1-244-754-11
2.7	1-244-611-11	27	1-244-635-11	270	1-244-659-11	2.7k	1-244-683-11	27 k	1-244-707-11	270k	1-244-731-11	2.7M	1-244-755-11
3.0	1-244-612-11	30	1-244-636-11	300	1-244-660-11	3.0k	1-244-684-11	30 k	1-244-708-11	300k	1-244-732-11	3.0M	1-244-756-11
3.3	1-244-613-11	33	1-244-637-11	330	1-244-661-11	3.3k	1-244-685-11	33 k	1-244-709-11	330k	1-244-733-11	3.3M	1-244-757-11
3.6	1-244-614-11	36	1-244-638-11	360	1-244-662-11	3.6k	1-244-686-11	36 k	1-244-710-11	360k	1-244-734-11	3.6M	1-244-758-11
3.9	1-244-615-11	39	1-244-639-11	390	1-244-663-11	3.9k	1-244-687-11	39 k	1-244-711-11	390k	1-244-735-11	3.9M	1-244-759-11
4.3	1-244-616-11	43	1-244-640-11	430	1-244-664-11	4.3k	1-244-688-11	43 k	1-244-712-11	430k	1-244-736-11	4.3M	1-244-760-11
4.7	1-244-617-11	47	1-244-641-11	470	1-244-665-11	4.7k	1-244-689-11	47 k	1-244-713-11	470k	1-244-737-11	4.7M	1-244-761-11
5.1	1-244-618-11	51	1-244-642-11	510	1-244-666-11	5.1k	1-244-690-11	51 k	1-244-714-11	510k	1-244-738-11	5.1M	1-244-762-11
5.6	1-244-619-11	56	1-244-643-11	560	1-244-667-11	5.6k	1-244-691-11	56 k	1-244-715-11	560k	1-244-739-11		
6.2	1-244-620-11	62	1-244-644 11	620	1-244-668-11	6.2k	1-244-692-11	62 k	1-244-716-11	620k	1-244-740-11		
6.8	1-244-621-11	68	1-244-645-11	680	1-244-669-11	6.8k	1-244-693-11	68 k	1-244-717-11	680k	1-244-741-11		
7.5	1-244-622-11	75	1-244-646-11	750	1-244-670-11	7.5k	1-244-694-11	75 k	1-244-718-11	750k	1-244-742-11		
8.2	1-244-623-11	82	1-244-647-11	820	1-244-671-11	8.2k	1-244-695-11	82 k	1-244-719-11	820k	1-244-743-11		
9.1	1-244-624-11	91	1-244-648-11	910	1-244-672-11	9.1k	1-244-696-11	91 k	1-244-720-11	910k	1-244-744-11		

HARDWARE NOMENCLATURE

Screw:

– P 3 × 10
- *L: Length in mm*
- *D: Diameter in mm*
- *Type of head*
- *Indicated slotted-head only. Unless otherwise indicated, it means cross-recessed head (Phillips type).*



Nut, Washer, Retaining ring:

N 3
- *Diameter of usable screw or shaft*
- *Reference designation*

Reference Designation	Shape	Description	Remarks
		SCREWS	
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
		SELF-TAPPING SCREWS	
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
		SET SCREWS	
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N		nut	
		WASHERS	
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
E		retaining ring	
G		grip-type retaining ring	

9-958-462-11

Sony Corporation

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